

What is claimed is:

1. A valveless microfluidic system comprising a substrate;
a plurality of wells located on the substrate
at least one flow channel fluidly connecting each of the wells from an inlet to an outlet,
each well preloaded with a desired reagent or buffer and the flow channel filled with a fluid that is immiscible with the desired reagent or buffer.
2. The microfluidic system of claim 1, wherein the fluidic system comprises a plurality of flow channels and a plurality of wells fluidly connected with each flow channel.
3. The microfluidic system of claim 1, wherein a first well of the plurality of wells comprises a magnetic bead comprising an analyte binding molecule.
4. The microfluidic system of claim 3, wherein the analyte binding molecule comprises an oligonucleotide, peptide, polypeptide, antibody or nanoparticle.
5. The microfluidic system of claim 3, further comprising a magnet for moving the magnetic beads through a fluid channel, the magnet positioned relative to the substrate to provide a magnetic field that manipulates the magnetic bead.
6. The microfluidic system of claim 1, wherein each well comprises an aqueous material and each fluid channel comprises an oil.
7. The microfluidic system of claim 5, further comprising a computer controller for moving the magnet relative to the substrate.
8. A method of purifying an analyte comprising passing an analyte through the flow channels and the plurality of wells of the microfluidic system of claim 1.
9. The method of claim 8, wherein one or more wells of the plurality of wells comprises a purification buffer, wash buffer, lyse buffer or any combination of the foregoing for purification of the analyte.
10. A kit comprising a microfluidic system of claim 1, preloaded with a desired combination of buffers or reagents.
11. The method of claim 8, wherein magnetic beads or moved through the fluid channels by movement of a magnet adjacent to the microfluidic device.
12. The method of claim 8, wherein the method purifies an oligonucleotide.
13. The method of claim 8, wherein the method amplifies and purifies an oligonucleotide.

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